

THE GENUS *PARAPLYSIA* WITH DESCRIPTION OF A  
NEW SPECIES.

BY J. D. F. GILCHRIST, M.A., B.Sc., PH.D.

(Read November 29, 1899.)

(Plate XVI.)

The classification of the Tectibranchiata is at present in a very unsatisfactory state as compared with many other groups of the Mollusca. This is the more to be regretted as this group of animals is one that shows an altogether peculiar aspect of the question of adaption, not only to external environment but particularly to changes of organisation brought about by new factors arising within the animal itself. I have elsewhere described some of these changes and attempted to assign them to their causes, but much yet remains to be done in the mere collection of facts before any final generalisation can be made. The mollusc now under our notice contributes something towards this end, and is therefore valuable not only as one more new species, but as a new factor to be considered in view of a much wider question.

GENUS *Paraplysia*.

Mr. Smith has described a mollusc, from Thursday Island, Torres Straits, which he regards as belonging to the genus *Aplysia*, giving it the specific name *piperata* (Zool. Coll. Alert, p. 89). Subsequently another somewhat similar form from Siam was found in the collection of the British Museum (Natural History), which I described as *Aplysia Mouhoti* (Ann. and Mag. Nat. Hist. (6), xv., May, 1895, p. 404). While assigning the animal to this genus I pointed out that these two species had several characters which marked them off from the other *Aplysiidæ*, and might entitle them to be placed in a new group. Mr. Pilsbry (Man. Conch. xv., p. 64) adopted this suggestion, and gave the generic name *Paraplysia* to this group. While this may be accepted provisionally, it will be seen, after examination of the specimens to be described, that some of the characters assigned to the group must be reconsidered. The features common to the two

species (*A. mouhoti* and *A. piperata*) were: (1) The pleuropodia in both cases start from about the first third of the body and run backwards within a few millimetres of the end of the foot, being quite separate throughout their entire length; (2) In both, the mantle, shell, and visceral mass are much more posteriorly situated than in, e.g., *A. limacina*, and, in co-ordination with this, the genital opening is peculiar in being located somewhat anteriorly to the mantle cavity; (3) The most striking point is the position of the rhinophora, which are situated close together between the anterior ends of the pleuropodia.

The genus *Paraplysia* was established and put on a level with that of *Aplysia*, *Dolabrifera*, *Notarchus*, &c., by Pilsbry, as possessing the following characteristics: General form oval; buccal tentacles rather large, widely separated and pointed; rhinophores small, conic, close together, situated between the anterior ends of the pleuropodial lobes. Pleuropodia arising at the anterior third of the animal's length, well separated at their origin and throughout, only uniting at their union with the foot very near to its posterior extremity. Mantle large, posterior exposed, with posterior excurrent siphon, and apparently covering the gills; the genital pore slightly in front of its anterior edge, not covered.

Shell about a third of the body, concave, subquadrate. The remarkable features of this type are: The position—unique in the Anaspidea—of the rhinophores between the anterior ends of the pleuropodial lobes, the latter being completely free; the posterior situation of the mantle and the short, oval form of the body. The posterior end of the foot is free from the visceral mass, which overhangs it.

*Paraplysia Lowii*, n. sp.

Turning now to the features of the animal to be described, it will be seen that these generic characters may require to be somewhat modified.

*External Features* (Pl. XVI. Figs. 1 and 2).—The general outline of the body (in the contracted condition after preservation in 2 per cent. formalin), while resembling the oval form of *P. piperata* and *P. Mouhoti*, approaches that of the more elongated form of the true *Aplysia* (*Tethys* of Pilsbry).

The pleuropodia also resemble those of, e.g., *Aplysia depilans*, being as well developed vertically and longitudinally and free from each other throughout their entire length, but being, relatively to the total length of the body, somewhat longer. Their height is about one-third of their length. They begin at the anterior fourth of the body and end at a point near the posterior extremity.

At their anterior extremity they are separated from each other by a somewhat narrow space and at their posterior extremity by a space of about the same extent. In the former space lie the two rhinophora, and in the latter is the siphonal prolongation of the mantle. This latter space is much more marked than in *A. depilans*, and shows no indication whatever of any continuity between the ends of the pleuropodia.

The anterior tentacles are well developed and ear-shaped, being widely separated and situated at the ends of the broad frontal region.

The posterior tentacles or rhinophora are small, conical in shape, and situated directly between the anterior ends of the pleuropodia. The bases of the tentacles are in contact with each other and that of the left tentacle with the left pleuropodial extremity. The right tentacle is only separated from the right pleuropodial by the genital furrow.

The colouration of the tentacles is that of the body generally, with the exception of the extreme tips, which are of a yellow colour.

The genital opening (Pl. XVI. Fig. 3, g. o.) is situated a little posterior to the middle point of the body, and is just covered by the mantle (Pl. XVI. Fig. 3, m.) under the anterior free edge of which it lies. The mantle itself, which can be completely covered by the pleuropodia, is thus situated in the posterior half of the body, and occupies about half of this region (excluding that part which is prolonged as a siphon). In the centre of the mantle appears a minute shell aperture. The siphon is well marked, being about half of the length of the mantle proper, but does not extending to the posterior extremity of the foot.

The gill (Pl. XVI. Fig. 3, g.) is completely covered by the mantle (Pl. XVI. Fig. 3, m.), in which is embedded a shell completely devoid of any carbonate of lime (Fig. 4).

The osphradium is not readily distinguished externally, and lies under the anterior extremity of the gill where it joins the body.

The opaline gland (Fig. 3, o. gl.) is multiple and well developed, lying in the angle between the right pleuropodia and the body and extending from a point a little posterior to the genital opening to the free extremity of the gill.

The visceral mass is not distinctly separated from the foot posteriorly, but forms a sharp angle with it. The anus, however, being situated at some distance from the base of the siphon, at about a quarter of its length, a part of the rectum may be regarded as separated from the body—an approach to the condition so characteristic of *P. Mouhoti*.

*Colouration.*—The body generally is of a dark olive-green, scattered irregularly in large angular patches, which are separated by fine



reticulations of the same colour. The disposal of the patches are somewhat similar on each side of the body, and this similarity is further increased by the presence of two white lines, due to the absence of pigment, running longitudinally and parallel to each other along each side of the body. The upper begins at the anterior margin of the pleuropodia on a level with the rhinophora and runs parallel with the margin of the foot. The lower begins just behind the anterior tentacles, runs parallel with the upper line, and ends on the margin of the foot at a point a little in advance of the ending of the upper line.

On the inside of the pleuropodia the colouration consists of dark dots forming a small margin which merges into reticulate markings towards the body where, at the base of the pleuropodia and on the region between the mantle and the rhinophora, it consists of a number of separate dots. The mantle is closely covered with such dots merging into short lines, the whole forming a general appearance of radiation from the shell aperture as a centre. On the siphon these take the form of dark patches and lines running longitudinally to it. The mantle cavity is devoid of colour, as is also the region opposite the gills in which the opaline gland lies.

*Systematic position.*—The three species of the proposed genus agree in the peculiar position of the rhinophora, but they present several differences. *P. piperata* and *P. Mouhoti* differ from *P. Lowii* in the much more posterior position of the mantle region, more oval body, and in having the genital aperture under the mantle. That all three agree in the free pleuropodia is not a fact of much significance, and *P. Lowii* differs from the other two in having the pleuropodia much more developed in a vertical direction.

There is, then, only this one distinct point, viz., the position of the rhinophora, and that, though peculiar to the group, does not, in my opinion, justify the definite establishment of a new genus, though it may be convenient to retain it till some new light may be thrown upon this interesting group by further material for anatomical examination.

Only one specimen has as yet been secured, and for this as well as other new specimens of marine life we are indebted to the members of the East London Angling Society, the president of which, Mr. Low, takes an active interest in the scientific aspect of the Society's work.